



# 2003 FAA National Software Conference


## Order 8110.49, Software Approval Guidelines



**FAA Order 8110.49**  
***Software Approval Guidelines***




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**Presentation Overview**

- ☞ **FAA Software Notices**
- ☞ **FAA Order 8110.49**
  - **Status**
  - **Document Overview**
  - **Section Highlights**
- ☞ **Summary**



# 2003 FAA National Software Conference

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### FAA Software Notices

- ✦ 8110.77 -> 8110.95 Field Loadable Software (FLS)
- ✦ 8110.78 -> 8110.89 Legacy Software
- ✦ 8110.79 -> 8110.93 PMA of FLS
- ✦ 8110.81 -> 8110.90 Software Review Process
- ✦ 8110.82 -> 8110.92 Previously Developed Software
- ✦ 8110.83 -> 8110.91 Software Tool Qualification
- ✦ 8110.84 -> 8110.94 User Modifiable Software
- ✦ 8110.85 Software Change Impact Analysis
- ✦ 8110.86 Software Conformity
- ✦ 8110.87 Level of FAA Involvement
- ✦ 8110.97 Reused Software Life Cycle Data



**Software Order  
Status & Highlights**

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### FAA Order 8110.49 Status

- ✎ **Title: “Software Approval Guidelines”**
- ✎ **Coordinate within FAA – 2/02**
- ✎ **Disposition FAA comments - 4/02**
- ✎ **Coordinate with FAA Legal (draft 2c) - 8/02**
- ✎ **Publish in Federal Register - 8/02**
- ✎ **Receive Public Comments via Federal Register – 10/02**
- ✎ **Complete Order – 6/3/03**
- ✎ **Training via Software Conference - 9/03**



### Software Order Overview

- |   |   |
|---|---|
| ✎ Chap 1- Introduction                    | ✎ Chap 10- SW Changes in Legacy Systems |
| ✎ Chap 2- Software Review Process         | ✎ Chap 11- SW Change Impact Analysis    |
| ✎ Chap 3- Determining LOFI in SW Projects | ✎ Chap 12- Reused SW Life Cycle Data    |
| ✎ Chap 4- SW Conformity                   | ✎ Appendix 1- LOFI Worksheet            |
| ✎ Chap 5- Approval of FLS                 | ✎ Appendix 2- LOFI Example 1            |
| ✎ Chap 6- PMA of FLS                      | ✎ Appendix 3- LOFI Example 2            |
| ✎ Chap 7- Approval of UMS                 | ✎ Appendix 4- LOFI Example 3            |
| ✎ Chap 8- Previously Developed Software   | ✎ Appendix 5- Feedback Form             |
| ✎ Chap 9- Qualification of SW Tools       |   |

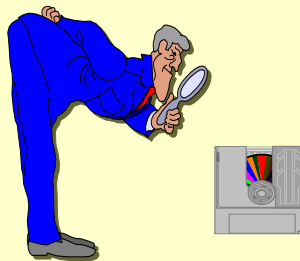
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## Order 8110.49, Software Approval Guidelines



### Chapter 1 Highlights

- Introduction
- No major changes from the Notices
- Note: definition of “observation”



### Chapter 2 Highlights

- Software Review Process
- Based on Notice 8110.81/.90
- No major changes from the Notices



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## Order 8110.49, Software Approval Guidelines



### Chapter 3 Highlights

- ✎ **Level of FAA Involvement in Software Projects**
- ✎ **Based on Notice 8110.87**
- ✎ **No major changes from the Notice**
- ✎ **References Appendices 1-4**



### Chapter 4 Highlights

- ✎ **Software Conformity**
- ✎ **Based on Notice 8110.86**
- ✎ **Significantly Changed Software Conformity Policy for Clarity**
  - **Software Part Conformity Inspection (was “design assurance software conformity inspection”)**
  - **Clarified ASI and ASE roles**

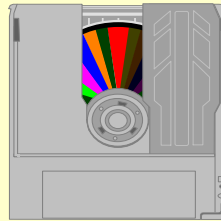
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## Order 8110.49, Software Approval Guidelines



### Chapter 5 Highlights

- ✎ **Field-Loadable Software (FLS)**
- ✎ **Based on Notice 8110.77/.95**
- ✎ **Added some information regarding FLS on TSO's articles (i.e., need to meet 21.607d)**



11



### Chapter 6 Highlights

- ✎ **Parts Manufacturer Approval (PMA) of FLS**
- ✎ **Based on Notice 8110.79/.93**
- ✎ **Changed criteria for major/minor change determination for PMA via licensing agreement**
  - **Uses change impact analysis process rather than software levels**
- ✎ **Added information on type design data for PMA'd software (i.e., SCI and SAS)**

12

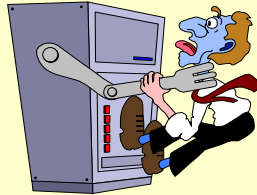
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## Order 8110.49, Software Approval Guidelines



### Chapter 7 Highlights

- **User-Modifiable Software (UMS)**
- **Based on Notice 8110.84/.94**
- **Slightly modified the section on displayed data for clarification purposes (i.e. “advisory data only”)**



13



### Chapter 8 Highlights

- **Level D Previously Developed Software**
- **Based on Notice 8110.82/.92**
- **Clarified that the policy is for COTS software, where design data is not accessible (i.e., not intended to be applied to all Level D software)**
- **Significant editing for clarification**

14

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## Order 8110.49, Software Approval Guidelines



### Chapter 9 Highlights

- **Software Tool Qualification**
- **Based on Notice 8110.83/.91**
- **Added information to address use of service history in tool qualification (reference DO-248B discussion paper)**
- **Added clarification of category for tools**



15



### Chapter 10 Highlights

- **Changes to Legacy Software**
- **Based on Notice 8110.78/.89**
- **Significant edits**
- **Changed “small, simple change” to “minor change” and added reference to change impact analysis process**

16

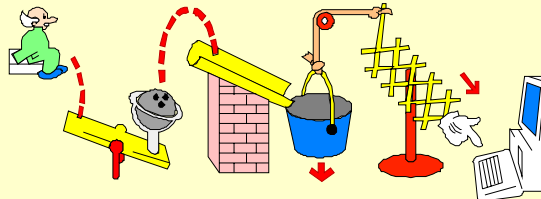
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## Order 8110.49, Software Approval Guidelines



### Chapter 11 Highlights

- **Software Change Impact Analysis**
- **Based on Notice 8110.85**
- **No significant changes from the Notice**



17



### Chapter 12 Highlights

- **Reuse of Software Life Cycle Data**
- **Based on Notice 8110.97**
- **Several editorial changes**
- **No technical changes**



18

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## Order 8110.49, Software Approval Guidelines

A presentation slide with a yellow background. In the top left corner is the FAA logo. The word "Summary" is centered at the top in a bold, black, sans-serif font. Below it is a bulleted list with three items, each preceded by a hand icon. The first item is "FAA Order 8110.49 incorporates 11 existing software Notices", followed by two sub-bullets: "Coordinated with FAA, Industry, and Public" and "Order incorporates some significant changes to previous software Notices". The second item is "Thank you to all of you who have provided input!". The third item is "Special thanks to Leanna Rierson!". A small number "20" is in the bottom right corner.

**Summary**

- ✎ **FAA Order 8110.49 incorporates 11 existing software Notices**
  - **Coordinated with FAA, Industry, and Public**
  - **Order incorporates some significant changes to previous software Notices**
- ✎ **Thank you to all of you who have provided input!**
- ✎ **Special thanks to Leanna Rierson!**